Agricultural Welding III - 18408

Name: _____ SS#_____ / _____ / _____

School: _____ Instructor: _____

(M): Math Competency	(CD): Career Development
(C): English & Communications	(E): Experienced Based
(S): Science Competency	(L): Leadership
(G): Social Studies	(LK): Life Knowlege

DIRECTIONS: Evaluate the student by checking the appropriate number to indicate the degree of Competency reached. Rate each task to reflect employability readiness.

Enrollment	Completion	Hours
Date: ___ / ___ / _____	Date: ___ / ___ / _____	Completed: _____

I certify that the student received training in the areas indicated.

Student
Signature: _____ Date: ___ / ___ / _____

Instructor
Signature: _____ Date: ___ / ___ / _____

Administrator
Signature: _____ Date: ___ / ___ / _____

Rating Scale: **3:** Mastery of subject matter **2:** Limited mastery of subject matter **1:** Non-mastery of subject matter **0:** No exposure to subject matter

Revision: 09-28-2008 (326.5)

SAFETY and HEALTH of WELDERS [review]

3 2 1 0 1 Identify common hazards in welding. E
3 2 1 0 2 Identify common causes of job-site accidents. E
3 2 1 0 3 Explain and identify proper personal protection used in welding. S
3 2 1 0 4 Demonstrates proper use and inspection of ventilation equipment. S
3 2 1 0 5 Demonstrates proper work actions for working in confined spaces. E
3 2 1 0 6 Demonstrates knowledge of the fire triangle and its importance in controlling a fire. S
3 2 1 0 7 React effectively in case of fire, or other emergency. S
3 2 1 0 8 Interpret safety color codes and importance to personal safety. C
3 2 1 0 9 Demonstrates proper Hot Zone operation. E
3 2 1 0 10 Demonstrates safety techniques for storing and handling cylinders. E
3 2 1 0 11 Utilizes proper hand tool safety procedures. E
3 2 1 0 12 Utilizes proper portable power tool safety procedures. E
3 2 1 0 13 Utilizes proper stationary power tool safety procedures. E
3 2 1 0 14 Explains how to avoid electrical shock when welding. S
3 2 1 0 15 Understands proper use of precautionary labeling and MSDS information. S
3 2 1 0 16 Demonstrates proper material handling methods. E
3 2 1 0 17 Complete a personal information sheet. C
3 2 1 0 18 Complete a Shop Safety Contract / Release form. C
3 2 1 0 19 Demonstrate knowledge of basic shop safety by satisfactorily completing Safety Orientation Exam. C
3 2 1 0 20 Demonstrates proper inspection and operation of equipment for each welding or thermal cutting process used. E

BASE METAL PREPARATION (review)

3 2 1 0 1 Identify the types of metal contamination. S
3 2 1 0 2 Identify defects caused by metal contamination. S
3 2 1 0 3 Identify equipment used for cleaning base metal. S
3 2 1 0 4 Clean base metal utilizing the proper equipment and procedures. S
3 2 1 0 5 Identify and explain joint design. M
3 2 1 0 6 Explain joint design considerations. M
3 2 1 0 7 Select and demonstrate the methods of joint preparation. M
3 2 1 0 8 Identify metals using nondestructive methods. S
3 2 1 0 9 Identify structural steel as to shape and size. M
3 2 1 0 10 Utilize measurement instruments to measure steel length, width, depth, and weight. M
3 2 1 0 11 Familiarized with English and Metric measurement and conversion techniques. M

WELDING SYMBOLS (review)

3 2 1 0 1 Identify and explain the various parts of a welding symbol. C
3 2 1 0 2 Identify and explain fillet and groove weld symbols. C
3 2 1 0 3 Read welding symbols on drawings, specifications, and welding procedure specifications. C
3 2 1 0 4 Interpret welding symbols from a print. C
3 2 1 0 5 Draw welding symbols based on the observation of actual welds. C

READING DETAIL DRAWINGS (review)

3 2 1 0 1 Identify and explain a welding detail drawing. C
3 2 1 0 2 Identify and explain lines, material fills, and sections. M
3 2 1 0 3 Identify and explain object views. C
3 2 1 0 4 Identify and explain dimensioning. M
3 2 1 0 5 Identify and explain notes and bill of materials. M
3 2 1 0 6 Interpret basic elements of a welding detail drawing. C
3 2 1 0 7 Develop basic welding drawings. C

WELD QUALITY (review)

3 2 1 0 1 Identify and explain codes governing welding. C
3 2 1 0 2 Explain the basic elements of welding codes. C
3 2 1 0 3 Identify and explain weld imperfections and their causes. S
3 2 1 0 4 Identify and explain nondestructive weld examination practices. S
3 2 1 0 5 Identify and explain destructive weld testing practices. S
3 2 1 0 6 Identify and explain welder qualification tests. C
3 2 1 0 7 Explain the importance of quality workmanship. CD

JOINT FIT-UP and ALIGNMENT (review)

3 2 1 0 1 Identify and explain job-code requirements. C
3 2 1 0 2 Check joint for proper fit and alignment using gauges and measuring tools. M
3 2 1 0 3 Identify and utilize plate and pipe fit-up tools for proper joint alignment. M
3 2 1 0 4 Identify and explain distortion and how it is controlled. S
3 2 1 0 5 Check for joint misalignment and poor fit-up before and after welding. M

ELECTRODES and SELECTION: SMAW (review)

3 2 1 0 1 Identify the function of the electrode flux. S
3 2 1 0 2 Explain the A.W.S. and A.S.M.E. filler metal classification system. S,M
3 2 1 0 3 Identify different types of filler metals. S
3 2 1 0 4 Determine size of electrode by wire core. M
3 2 1 0 5 Identify and explain factors that affect electrode selection. S,M
3 2 1 0 6 Explain the storage and control of filler metals. S
3 2 1 0 7 Explain filler metal traceability requirements and how to use applicable code requirements. S
3 2 1 0 8 Identify and select the proper electrode for an identified welding task. E

OPEN-ROOT PIPE WELDS: SMAW

3 2 1 0 1 Prepare SMAW equipment and materials for open-root pipe welds. E
3 2 1 0 2 Identify the components, features and practices for open-root pipe welds. S
3 2 1 0 3 Practice flat (1G-ROTATED) open-root V-groove pipe welds, using E60XX and E70XX. E
3 2 1 0 4 Practice horizontal (2G) open-root V-groove pipe welds, using E60XX and E70XX. E
3 2 1 0 5 Practice multiple (5G) open-root V-groove pipe welds, using E60XX and E70XX. E
3 2 1 0 6 Practice multiple inclined (6G) open-root V-groove pipe welds, using E60XX and E70XX. E

STAINLESS STEEL GROOVE and PIPE WELDS: SMAW

3 2 1 0 1 Identify and explain stainless steel metallurgy. S
3 2 1 0 2 Identify and explain the selection of electrodes for

welding stainless steel. C
3 2 1 0 3 Identify and explain welding variations for stainless steel. C
3 2 1 0 4 Prepare arc welding equipment for stainless steel welds. E
3 2 1 0 5 Explain stainless steel open-root V-groove welds. C
6 Perform shielded metal arc welding (SMAW) on stainless steel open-root V-groove joints: E
3 2 1 0 a. Flat (1G) position
3 2 1 0 b. Horizontal (2G) position
3 2 1 0 c. Vertical (3G) position
3 2 1 0 d. Overhead (4G) position
3 2 1 0 7 Explain stainless steel open-root V-groove pipe welds. C
8 Perform shielded metal arc welding (SMAW) on stainless steel open-root V-groove pipe welds: E
3 2 1 0 a. Flat (1G-ROTATED) position
3 2 1 0 b. Horizontal (2G) position
3 2 1 0 c. Multiple (5G) position
3 2 1 0 d. Inclined multiple (6G) position

GMAW & FWAW: EQUIPMENT and FILLER METALS
3 2 1 0 1 Explain gas metal arc welding (GMAW) and flux cored arc welding (FCAW) safety C
3 2 1 0 2 Explain the characteristics of welding current and power sources. C
3 Identify and explain the use of GMAW and FCAW equipment: C
3 2 1 0 a. Spray transfer.
3 2 1 0 b. Globular
3 2 1 0 c. Short circuiting
3 2 1 0 d. Pulse
3 2 1 0 4 Identify and explain the use of GMAW and FCAW shielding gases and filler metals. C
3 2 1 0 5 Set up GMAW and FCAW equipment and identify tools for weld cleaning. E

GMAW AND FCAW – PLATE
3 2 1 0 1 Perform GMAW multiple-pass fillet welds on plate, using solid or composite wire and shielding gas in multiple positions. E
3 2 1 0 2 Perform GMAW multiple-pass open-root V-groove welds on plate, using solid or composite wire and shielding gas, in multiple positions. E
3 2 1 0 3 Perform GMAW spray fillet and open-root V-groove welds on plate, using solid or composite wire and shielding gas, in flat and horizontal positions. E
3 2 1 0 4 Perform FCAW multiple-pass fillet welds on plate in multiple positions using flux cored wire and, if required, shielding gas. E
3 2 1 0 5 Perform FCAW multiple-pass open-root V-groove welds on plate in multiple positions using flux cored wire and, if required, shielding gas. E

GMAW – PIPE
3 2 1 0 1 Prepare GMAW equipment for open-root V-groove pipe welds. E
3 2 1 0 2 Identify and explain open-root V-groove pipe weld techniques. C
3 Perform open-root V-groove pipe welds using GMAW: E
3 2 1 0 a. 1G-ROTATED
3 2 1 0 b. 2G
3 2 1 0 c. 5G
3 2 1 0 d. 6G

FCAW – PIPE
3 2 1 0 1 Prepare FCAW equipment for open-root V-groove pipe weld techniques E
3 2 1 0 2 Identify and explain open-root V-groove pipe welds. C
3 Perform open-root V-groove pipe welds using FCAW: E
3 2 1 0 a. 1G-ROTATED
3 2 1 0 b. 2G
3 2 1 0 c. 5G
3 2 1 0 d. 6G

GMAW – ALUMINUM PLATE AND PIPE
3 2 1 0 1 Explain GMAW, and set up equipment to weld aluminum. C
3 2 1 0 2 Build a pad with stringer beads and weave beads, using aluminum wire and shielding gas. E
3 Perform multiple-pass fillet welds on aluminum plate using aluminum wire and shielding gas: E
3 2 1 0 a. 1F (flat)
3 2 1 0 b. 2F (horizontal)
3 2 1 0 c. 3F (vertical)
3 2 1 0 d. 4F (overhead)
4 Perform V-groove welds on aluminum plate using aluminum wire and shielding gas: E
3 2 1 0 a. 1G (flat)
3 2 1 0 b. 2F (horizontal)
3 2 1 0 c. 3F (vertical)
3 2 1 0 d. 4F (overhead)
5 Perform V-groove welds on aluminum pipe using aluminum wire and shielding gas: E
3 2 1 0 a. 1G-ROTATED (flat)
3 2 1 0 b. 2G (horizontal)
3 2 1 0 c. 5G (multiple)
3 2 1 0 d. 6G (inclined multiple)

FFA and LEADERSHIP
3 2 1 0 1 Use interviewing techniques to gather information C
3 2 1 0 2 Prepare and deliver a presentation appropriate to audience and subject. C
3 2 1 0 3 Participate in group communication activities, demonstrating parliamentary procedure and interpersonal skills. L
3 2 1 0 4 Restate or paraphrase a conversation to confirm what was said. C
3 2 1 0 5 Review methods of learning and determine dominate learning style. CD
3 2 1 0 6 Define qualities of leadership L
3 2 1 0 7 Demonstrate and develop personal leadership qualities.
3 2 1 0 8 Participate in FFA activities at the local, district and state levels. L
3 2 1 0 9 Participate in team tasks, including:
3 2 1 0 a. establishing team goals. L
3 2 1 0 b. establishing team standards. L
3 2 1 0 c. receiving and giving information. L
3 2 1 0 d. processing information. L
3 2 1 0 e. planning for group action. L
3 2 1 0 f. completing team task on time. L

SUPERVISED OCCUPATIONAL EXPERIENCE
3 2 1 0 1 Compile and maintain financial records, experience records, logs, etc., of S.O.E.P. C
2 Complete a personal inventory of skills. CD
3 2 1 0 a. Keep a record of personal receipts and expenses.
3 2 1 0 b. Complete a personal cash-flow statement. CD
3 2 1 0 c. Complete a personal net worth statement. CD
3 2 1 0 d. Develop a personal financial expectation. CD
3 Identify influences on time:
3 2 1 0 a. set priorities involving time management. CD
3 2 1 0 b. identify "time wasters". CD
3 2 1 0 c. estimate time requirement for accomplishing a specific task. CD
3 2 1 0 d. demonstrate daily time plan for work, family, school, social, etc. CD
3 2 1 0 4 Apply employee rules, regulations, and policies to a given job situation. CD

OCCUPATIONAL ORIENTATION
3 2 1 0 1 Prepares time or job cords, reports of records. CD
3 2 1 0 2 Performs housekeeping duties. E
3 2 1 0 3 Follows verbal instructions to complete work assignments. C
3 2 1 0 4 Follows written instructions to complete work assignments. C
5 Interpret workplace policies related to:
3 2 1 0 a. personal hygiene LK
3 2 1 0 b. absences and personal leave. LK
3 2 1 0 c. substance abuse and/or drug testing. LK
3 2 1 0 d. employee theft LK
3 2 1 0 e. sexual harassment. LK
3 2 1 0 f. punctuality and dependability LK
3 2 1 0 g. responsibility for position. LK
3 2 1 0 h. accuracy. LK
6 Demonstrate interpersonal skills:
3 2 1 0 a. tact and diplomacy. LK
3 2 1 0 b. respect for others and yourself. LK
3 2 1 0 c. respect for diversity. LK
3 2 1 0 d. recognition of other' strengths. LK
3 2 1 0 e. positive assertiveness. LK
3 2 1 0 f. positive attitude. LK
3 2 1 0 g. positive leadership. LK
3 2 1 0 7 Completed personal interests survey using Kansas Career Pipeline.CD
3 2 1 0 8 Completed personal skills survey using Kansas Career Pipeline. CD
3 2 1 0 9 Select 2 , or more, career occupations involving metal processes and collect the following:
3 2 1 0 a. qualifications needed. CD

3 2 1 0	b.	advancement potential. CD
3 2 1 0	c.	salary. CD
3 2 1 0	d.	future outlook and placement. CD